CLAIMS

1. A method for decoding compressed video data comprising the steps of:

transforming information about the spatial frequency distribution of a video data block into pixel values;

generating, prior to said transformation, a first reference value representing the variations in information about spatial frequency distribution within the block;

generating, after said transformation, a second reference value representing the abruptness of variation in certain information between the block and at least one previously transformed video data block;

comparing the first reference value to a certain first threshold value and the second reference value to a certain second threshold value; and

detecting an error in the block, as a response to either of the first and second reference values being greater than the first and respectively the second threshold value.

2. A method according to claim 1 comprising the steps of:

generating, after decoding a number of blocks forming a macroblock, a third reference value representing the abruptness of variations in certain information within the macroblock;

comparing the third reference value to a certain third threshold value;

detecting an error in the macroblock, as a response to the third reference value being greater than the third threshold value.

3. A method according to claim 1 comprising the steps of:

generating, after decoding a number of blocks forming a macroblock, a third reference value representing the abruptness of variations in certain information between the macroblock and at least one previously decoded macroblock;

comparing the third reference value to a certain third threshold value; and

detecting an error in the macroblock, as a response to the third reference value being greater than the third threshold value.

4. A method according to claim 1 comprising the step of:

initiating, as a response to the detected error, an error concealment process.

5. A method according to claim 1, wherein said transformation step is an inverse DCT transformation of the block, and the method comprises the steps of:

dividing DCT coefficients of the block into at least two parts, wherein the coefficients of the first part are associated with higher frequencies than the coefficients of the second part;

generating a first reference value from the coefficients of the first part; and

generating a first threshold value from the coefficients of a set of coefficients not belonging to the first part.

6. A method according to claim 5 comprising the steps of:

forming at least two sets of DCT coefficients from the coefficients not belonging to the first part;

generating a first reference value for each formed set of DCT coefficients;

generating a corresponding first threshold value for each formed set of DCT coefficients;

comparing, for each of the sets, the first reference value of the set with the first threshold value of the set; and

detecting an error in the block, as a response to any of the first reference values of the set being greater than the corresponding first threshold value of the set.

7. A method according to claim 6, wherein said first reference values are the greatest absolute coefficient values of a set of DCT coefficients, and the first

threshold values comprise a predefined constant value added, as a response to the number of non-zero coefficient values being greater than one, to the absolute sum of the coefficient values excluding said greatest absolute coefficient value.

8. A method according to claim 1 comprising the step of:

generating a second reference value from the difference or differences between the DC components of the current block and of at least one previously transformed block.

9. A method according to claim 1, wherein said generation of the second reference value comprises the steps of:

dividing each block into a certain number of sub-blocks;

calculating the average of the pixel values for the sub-blocks; and

generating a second reference value from the difference between the averaged pixel values of the current sub-block and at least another neighbouring sub-block.

10. A method according to claim 1, wherein each video data block comprises a number of pixels arranged in rows, and boundary pixels are the pixels closest to the boundary between two blocks, wherein said generation of the second reference value comprises, for a boundary of a block the steps of:

calculating a first difference value representing the difference between the pixel value of the boundary pixel and the pixel value of the closest boundary pixel in the same row of the adjacent block;

calculating extrapolated boundary pixel values from the boundary pixels and the closest pixel in the same row of the same block;

calculating a second difference value comprising the difference between the extrapolated boundary pixel values;

comparing the first and second difference values;

adding the smaller of the first and the second values to a sum of differences calculated in the same way for all pixels in the boundary of the block; and

generating, for each block boundary, a second reference value from said sum of differences of all pixels in the boundary.

11. A method according to claim 2 comprising the steps of:

dividing the AC coefficients of the macroblock into groups of values of at least U-blocks, V-blocks and Y-blocks;

generating sets of values representing the variation in the AC values of U-, V-, and Y-blocks in the macroblock;

generating a third reference value from the magnitude of variations in U- and V-components; and

generating a third threshold value from the magnitude of variations in the corresponding Y-component.

12. A method according to claim 3 comprising the steps of:

generating the third reference value from the differences between the DC values of U-, and V-blocks in the macroblock and in at least one previously decoded macroblock; and

generating a third threshold value from the differences between the DC values of Y-blocks in the macroblock and in at least one previously decoded macroblock.

13. A method according to claim 2 comprising the steps of:

generating the third reference value from the absolute sum of values of AC coefficients in a number of blocks in a macroblock; and

generating the third threshold value from the estimated sum of values of AC coefficients needed to account for the variation in DC coefficients in said number of blocks.

14. A method according to claim 2 comprising the steps of:

marking the blocks as suspicious, as a response to either of the first and second reference values being greater than the first and respectively the second threshold value; and

initiating further detection for macroblocks comprising at least one block marked as suspicious.

15. A device for decoding compressed video data, comprising:

means for transforming information about the spatial frequency distribution of a video data block into pixel values;

means for generating, prior to said transformation, a first reference value representing the variations in information about spatial frequency distribution within the block;

means for generating, after said transformation, a second reference value representing the abruptness of variation in certain information between the block and at least one previously transformed video data block;

means for comparing the first reference value to a certain first threshold value and the second reference value to a certain second threshold value; and

means for detecting an error in the block, as a response to either of the first and second reference values being greater than the first and respectively the second threshold value.

16. A device according to claim 15 comprising:

means for generating, after decoding a number of blocks forming a macroblock, a third reference value representing the abruptness of variations in certain information within the macroblock;

means for comparing the third reference value to a certain third threshold value; and

means for detecting an error in the macroblock, as a response to the third reference value being greater than the third threshold value.

17. A device according to claim 15 comprising

means for initiating, as a response to the detected error, an error concealment process.

18. A device according to claim 15 comprising a mobile terminal.